

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (original) A method for processing an audio signal having one or more directional input channels, comprising:

detecting the number and directional designators of said directional input channels; and

processing each of said directional input channels by one of a plurality of selectable processes, the selectable process applied to each directional input channel being responsive to said detecting step according to a predetermined pattern without user intervention.

2 (original) A method for processing an audio signal in accordance with claim 1, wherein said selectable processes include a process which includes combining said directional input channel with an other directional input channel.

3. (original) A method for processing an audio signal in accordance with claim 2, wherein said process includes attenuating said other directional input channel.

4. (original) A method for processing an audio signal in accordance with claim 2, wherein said selectable processes include a process which includes phase shifting said other directional input channel.

5. (original) A method for processing an audio signal in accordance with claim 1, wherein said predetermined pattern includes, responsive to said detecting step detecting a monophonic surround channel, a left channel signal, and a right channel signal, a selectable process that

includes processing said left channel signal to produce a modified left channel signal and processing said right channel signal to produce a modified right channel signal.

6. (original) A method for processing an audio signal in accordance with claim 5, wherein said modified left channel signal and said modified right channel signal include a surround channel component, and where said left channel surround channel component and said right channel surround channel component are out of phase.

7. (currently amended) A method for processing an audio signal in accordance with claim 1, wherein said processing produces a number of output directional channels, said number of output directional channels and the directional designators of said output directional channels being responsive to said detecting step according to a predetermined pattern.

8. (original) A method for processing an audio signal having one or more directional input channels, comprising:

detecting the number and directional designators of said directional input channels; and

processing said directional input channels to produce an alternatively selectable number of output directional channels, said alternatively selectable number of output directional channels and the contents of said output directional channels being responsive to said detecting step according to a predetermined pattern without user intervention.

9. (original) A method for processing an audio signal in accordance with claim 8, wherein said alternatively selectable numbers includes only numbers equal and greater than said number of directional input channels.

10. (original) Method for processing an audio signal in accordance with claim 8 wherein said number of input channels is a number from one to five, inclusive, and where said alternatively selectable number includes four and five.

11. (original) A method for processing an audio signal, comprising:

determining whether said audio signal is an analog signal or a digital signal;

responsive to a determining that said signal is an analog signal, decoding said signal to produce a left channel, a right channel, a center channel, a left surround channel and a right surround channel;

responsive to a determining that said audio signal is a digital signal, detecting the number and directional designators of directional input channels in said audio signal; and

processing each of said directional input channels by one of a plurality of selectable processes, the selectable process applied to each directional input channel being responsive to said detecting step according to a predetermined pattern without user intervention.

12 (original) A method for processing an audio signal in accordance with claim 11, wherein said selectable processes include a process which includes combining said directional input channel with an other directional input channel.

13. (original) A method for processing an audio signal in accordance with claim 12, wherein said process includes attenuating said other directional input channel.

14. (original) A method for processing an audio signal in accordance with claim 11, wherein said selectable processes include a process which includes phase shifting and combining with an other directional input channel.

15. (original) A method for processing an audio signal in accordance with claim 11, wherein said predetermined pattern includes, responsive to said detecting step detecting a monophonic surround channel, a left channel signal, and a right channel signal, a selectable process that includes processing said left channel signal to produce a modified left channel signal and processing said right channel signal to produce a modified right channel signal.

16. (original) A method for processing an audio signal in accordance with claim 15, wherein said modified left channel signal and said modified right channel signal include a surround channel component, and where said left channel surround channel component and said right channel surround channel component are out of phase.

17. (currently amended) A method for processing an audio signal in accordance with claim 11, wherein said processing produces a number of output directional channels, said number of output directional channels and the directional designators of said output directional channels being responsive to said detecting step according to a predetermined pattern.

18. (original) A method for processing an audio signal, comprising:

determining whether said audio signal is an analog signal or a digital signal;

responsive to a determining that said signal is an analog signal, decoding said signal to produce a left channel, a right channel, a center channel, a left surround channel and a right surround channel;

responsive to a determining that said audio signal is a digital signal, detecting the number and directional designators of directional input channels in said audio signal; and

processing said directional input channels to produce a plurality of output directional channels, the number of output directional channels and the directional designators of said output

directional channels being responsive to said detecting step according to a predetermined pattern without user intervention.

19 (original) A method for processing an audio signal in accordance with claim 18, wherein said selectable processes include a process which includes combining said directional input channel with an other directional input channel.

20. (original) A method for processing an audio signal in accordance with claim 19, wherein said process includes attenuating said other directional input channel.

21. (original) A method for processing an audio signal in accordance with claim 18, wherein said selectable processes include a process which includes phase shifting and combining with an other directional input channel.

22. (original) A method for processing an audio signal in accordance with claim 18, wherein said predetermined pattern includes, responsive to said detecting step detecting a monophonic surround channel, a left channel signal, and a right channel signal, a selectable process that includes processing said left channel signal to produce a modified left channel signal and processing said right channel signal to produce a modified right channel signal.

23. (original) A method for processing an audio signal in accordance with claim 22, wherein said modified left channel signal and said modified right channel signal include a surround channel component, and where said left channel surround channel component and said right channel surround channel component are out of phase.

24. (currently amended) A method for processing an audio signal in accordance with claim 18, wherein said processing produces a number of output directional channels, said number of output directional channels and the directional designators of said output directional channels being responsive to said detecting step according to a predetermined pattern.

25. (original) A method for processing an audio signal having one or more directional input channels, comprising:

detecting the number of surround channels in said audio signal; and

processing said directional input channels by one of a plurality of selectable processes to produce two stereo surround directional channels, the selectable process applied to said directional input channels being responsive to said detecting step according to a predetermined pattern without user intervention.

26. (original) A method for processing an audio signal in accordance with claim 25, wherein said number of surround channels is zero.

27. (withdrawn) A method for processing an audio signal, comprising:

determining whether said audio signal has been equalized for a large room; and

responsive to a determining that said audio signal has been equalized for a large room, applying a pre-selected gain below a threshold frequency.

28. (withdrawn) A method for processing an audio signal in accordance with claim 27, wherein said threshold frequency is approximately 120 Hz

29. (withdrawn) A method for processing an audio signal in accordance with claim 27, wherein said pre-selected gain is approximately 10dB.

30. (withdrawn) A method for processing an audio signal in accordance with claim 27, wherein said determining further determines if said audio signal includes a low frequency equalization channel; and

responsive to a determining that said audio signal includes said low frequency equalization channel, applying a pre-selected gain to said low frequency equalization channel.

31. (withdrawn) A method for processing an audio signal in accordance with claim 30, wherein said audio signal has a directional channel, responsive to a determining that said audio signal has said low frequency equalization channel, applying said pre-selected gain to said low frequency equalization channel and not applying said pre-selected gain to said directional channel; and

responsive to a determining that said audio signal does not have said low frequency equalization channel, applying said pre-selected gain to said directional channel.

32. (withdrawn) A method for processing an audio signal in accordance with claim 27, responsive to a determining that said audio signal has not been equalized for a large room, determining whether said audio signal is surround encoded, and

responsive to a determining that said audio signal is surround encoded, applying said pre-selected gain below said threshold frequency, and

responsive to a determining that said audio signal is not surround encoded, not applying said pre-selected gain below said threshold frequency.

33. (withdrawn) A method for processing an audio signal in accordance with claim 27, responsive to a determining that it is not known whether said audio signal has been equalized for a large room, determining whether said audio signal is surround encoded, and

responsive to a determining that audio signal is surround encoded, applying said pre-selected gain below said threshold frequency, and

responsive to a determining that said audio signal is not surround encoded, not applying said pre-selected gain below said threshold frequency.

34. (original) An apparatus for processing an audio signal having one or more directional input channels, comprising:

a input characteristics determiner for detecting the number and directional designators of said directional input channels; and

a processor for processing each of said directional input channels, said processor being designed and constructed to process said audio signal by one of a plurality of selectable processes, the selectable process applied to each directional input channel being responsive to said input characteristics determiner according to a predetermined pattern without user intervention.

35. (currently amended) An apparatus for processing an audio signal in accordance with claim 34, wherein said processor is designed and constructed to produce a number of output directional channels, said number of output directional channels and the directional designators of said output directional channels being responsive to said input characteristics determiner according to a predetermined pattern.

36. (original) An apparatus for processing an audio signal having one or more directional input channels, comprising:

an input characteristics determiner for detecting the number and directional designators of said directional input channels; and

a processor for processing said directional input channels, said processor being designed and constructed to produce an alternatively selectable number of output directional channels, the



number of output directional channels and the contents of said output directional channels being responsive to said input characteristics determiner according to a predetermined pattern without user intervention.

37. (currently amended) An apparatus for processing an audio signal having at least one directional input channel, comprising:

an input characteristics determiner for determining whether said audio signal is an analog signal or a digital signal and for determining the number and directional designators of said directional input channels ~~digital signals~~;

a first processor, responsive to said input characteristics determiner for decoding said analog signals to produce a left channel, a right channel, a center channel, a left surround channel and a right surround channel; and

a second processor, responsive to said input characteristics determiner, for processing each of said directional input channels of said digital signals by one of a plurality of selectable processes, the selectable process applied to each directional input channel being responsive to said input characteristics determiner according to a predetermined pattern without user intervention.

38. (currently amended) An apparatus for processing an audio signal in accordance with claim 37, wherein said processor is designed and constructed to produce an alternatively selectable number of output directional channels, said number of output directional channels and the directional designators of said output directional channels being responsive to said detecting step according to a predetermined pattern.

39. (currently amended) An apparatus for processing an audio signal having at least one directional input channel, comprising:

an input characteristics determiner for determining whether said audio signal is an analog signal or a digital signal and for determining the number and directional designators of said directional input channels in said digital signals;

a decoder, responsive to said input characteristics determiner for decoding said analog signals to produce a left channel, a right channel, a center channel, a left surround channel and a right surround channel; and

a processor, for processing said directional input channels of ~~in~~ said digital signals to produce a plurality of output directional channels, the number of output directional channels and the directional designators of said output directional channels being responsive to said input characteristics determiner according to a predetermined pattern without user intervention.

40. (currently amended) An apparatus for processing an audio signal in accordance with claim 39, wherein said processor being constructed and arranged to produce a alternatively selectable number of output directional channels, said alternatively selectable number of output directional channels and the directional designators of said output directional channels being responsive to said detecting step according to a predetermined pattern.

41. (withdrawn) An apparatus for processing an audio signal, comprising:

an input characteristics determiner for determining whether said audio signal has been equalized for a large room;

an equalizer, responsive to said determiner, for applying a pre-selected gain below a threshold frequency.

42. (withdrawn) An apparatus for processing an audio signal in accordance with claim 41, wherein said threshold frequency is approximately 120 Hz

43. (withdrawn) An apparatus for processing an audio signal in accordance with claim 41, wherein said pre-selected gain is approximately 10dB.

44. (withdrawn) An apparatus for processing an audio signal in accordance with claim 41, wherein said input characteristics determiner is constructed and arranged to determine if said audio signal includes a low frequency equalization channel

45. (withdrawn) An apparatus for processing an audio signal in accordance with claim 41, wherein said input characteristics determiner is further constructed and arranged to determine whether said audio signal is surround encoded.